



(43) International Publication Date
12 September 2003 (12.09.2003)

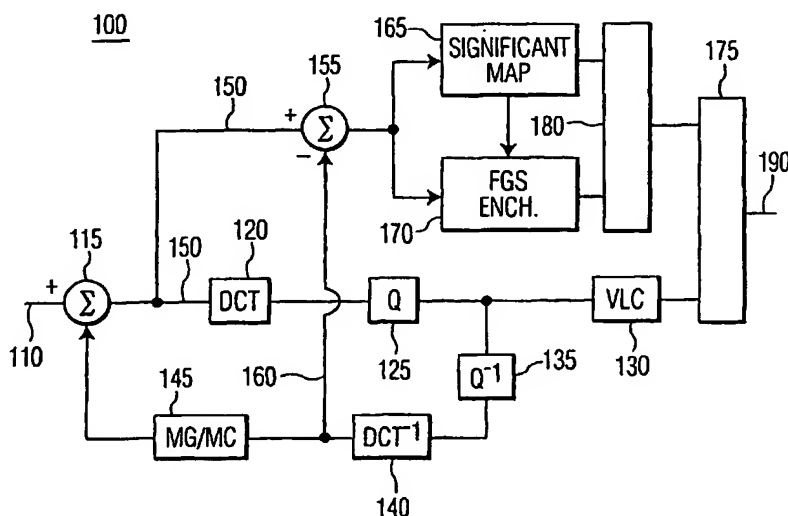
PCT

(10) International Publication Number
WO 2003/075579 A3

- (51) **International Patent Classification⁷:** **H04N 7/26, 7/50**
 (21) **International Application Number:** **PCT/TB2003/000789**
 (22) **International Filing Date:** **4 March 2003 (04.03.2003)**
 (25) **Filing Language:** **English**
 (26) **Publication Language:** **English**
 (30) **Priority Data:**
 60/362,592 5 March 2002 (05.03.2002) US
 60/434,055 17 December 2002 (17.12.2002) US
 (71) **Applicant (for all designated States except US):** **KONIN-
 KLJKE PHILIPS ELECTRONICS N.V. [NL/NL];**
 Groenewoudseweg 1, NL-5621 BA Eindhoven (NL).
 (72) **Inventors; and**
 (75) **Inventors/Applicants (for US only):** **VAN DER
 SCHAAR, Mihaela [NL/US];** c/o Prof . Holstlaan 6, NL-5656 AA Eindhoven (NL).
 (74) **Agent:** **GROENENDAAL, Antonius, W., M.;** Philips
 Intellectual Property & Standards, Prof. Holstlaan 6,
 NL-5656 AA Eindhoven (NL).
 (81) **Designated States (national):** AE, AG, AL, AM, AT, AU,
 AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU,
 CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH,
 GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC,
 LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW,
 MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SC, SD, SE,
 SG, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ,
 VC, VN, YU, ZA, ZM, ZW.
 (84) **Designated States (regional):** ARIPO patent (GH, GM,
 KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW),
 Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM),
 European patent (AT, BE, BG, CH, CY, CZ, DE, DK, EE,
 ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO,
 SE, SI, SK, TR), OAPI patent (BF, BJ, CF, CG, CI, CM,
 GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

[Continued on next page]

- (54) Title: METHOD AND SYSTEM FOR LAYERED VIDEO ENCODING**



- (57) Abstract:** In a layered encoding system having at least one layer comprising a plurality of sub-layers (272, 274, 276), a method is disclosed herein for encoding a video image (200) composed of a plurality of pixel blocks containing at least one area determined to be significant (200, 215, 220) within a corresponding sub-layer (272, 274, 276). The method comprises the steps of: associating a level of significance with each block (250, 252) of a known size within the at least one significant area (200), associating a level of significance with successively larger blocks (222, 244) dependent upon the level of significance of at least one of the blocks (250, 252) of a known size contained within said larger block (222, 244), and mapping each of the associated levels of significance. In another embodiment of the invention, the significance map is transmitted and corresponding image layers may be reconstructed using the significance map.



Declarations under Rule 4.17:

- *as to the applicant's entitlement to claim the priority of the earlier application (Rule 4.17(iii)) for the following designation CN*
- *as to the applicant's entitlement to claim the priority of the earlier application (Rule 4.17(iii)) for the following designation CN*

Published:

- *with international search report*

- *before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments*

(88) Date of publication of the international search report:
31 December 2003

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

INTERNATIONAL SEARCH REPORT

 Internat Application No
 PCT/IB 03/00789

 A. CLASSIFICATION OF SUBJECT MATTER
 IPC 7 H04N7/26 H04N7/50

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

 Minimum documentation searched (classification system followed by classification symbols)
 IPC 7 H04N

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the International search (name of data base and, where practical, search terms used)

EPO-Internal, INSPEC, PAJ

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	WO 99 49412 A (ATSUMI EIJI ;MITSUBISHI ELECTRIC CORP (JP); FARVARDIN NARIMAN (US)) 30 September 1999 (1999-09-30) page 21, line 7 -page 23, line 1 page 44, line 25 -page 45, line 13 figures 7A-7C	1-3,5-13
Y	---	4
	--- -/--	

☒ Further documents are listed in the continuation of box C.

☒ Patent family members are listed in annex.

* Special categories of cited documents :

- *A* document defining the general state of the art which is not considered to be of particular relevance
- *E* earlier document but published on or after the international filing date
- *L* document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)
- *O* document referring to an oral disclosure, use, exhibition or other means
- *P* document published prior to the international filing date but later than the priority date claimed

- *T* later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
- *X* document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
- *Y* document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art
- *G* document member of the same patent family

Date of the actual completion of the international search

30 October 2003

Date of mailing of the international search report

06/11/2003

Name and mailing address of the ISA

 European Patent Office, P.B. 5818 Patentlaan 2
 NL - 2280 HV Rijswijk
 Tel. (+31-70) 340-2040, Tx. 31 651 epo nl,
 Fax: (+31-70) 340-3016

Authorized officer

Wahrenberg, A.

INTERNATIONAL SEARCH REPORT

Internatid pplication No
PCT/IB 03/00789

C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	VAN DER SCHAAR M ET AL: "Content-based selective enhancement for streaming video" PROCEEDINGS 2001 INTERNATIONAL CONFERENCE ON IMAGE PROCESSING. ICIP 2001. THESSALONIKI, GREECE, OCT. 7 - 10, 2001, INTERNATIONAL CONFERENCE ON IMAGE PROCESSING, NEW YORK, NY: IEEE, US, vol. 1 OF 3. CONF. 8, 7 October 2001 (2001-10-07), pages 977-980, XP010563929 ISBN: 0-7803-6725-1 the whole document	4
A	---	1-3,5-13
A	LI W: "FINE GRANULARITY SCALABILITY IN MPEG-4 FOR STREAMING VIDEO" ISCAS 2000. PROCEEDINGS OF THE 2000 IEEE INTERNATIONAL SYMPOSIUM ON CIRCUITS AND SYSTEMS. GENEVA, SWITZERLAND, MAY 28-31, 2000, IEEE INTERNATIONAL SYMPOSIUM ON CIRCUITS AND SYSTEMS, NEW YORK, NY: IEEE, US, vol. 5 OF 5, 2000, pages 299-302, XP000965729 ISBN: 0-7803-5483-4 paragraph '04.1!	1-13
A	---	1-13
A	US 2002/006161 A1 (RADHA HAYDER ET AL) 17 January 2002 (2002-01-17) paragraph '0024! - paragraph '0026! figure 2A	1-13
A	---	1-3,5-13
A	US 2001/016008 A1 (BAHL PARAMVIR ET AL) 23 August 2001 (2001-08-23) paragraph '0037! paragraph '0042! figure 6	1-3,5-13
A	---	1-13
A	WO 01 91454 A (KONINKL PHILIPS ELECTRONICS NV) 29 November 2001 (2001-11-29) page 1, line 28 -page 2, line 2 page 4, line 1 - line 8 figure 2	1-13
P,A	---	1-13
P,A	US 2002/080878 A1 (LI WEIPING) 27 June 2002 (2002-06-27) paragraph '0012!	1-13

INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No

PCT/IB 03/00789

Patent document cited in search report		Publication date	Patent family member(s)	Publication date
WO 9949412	A	30-09-1999	WO 9949413 A1	30-09-1999
			AU 6441398 A	18-10-1999
			AU 9480898 A	18-10-1999
			CN 1291314 T	11-04-2001
			EP 1062625 A1	27-12-2000
			EP 1062623 A1	27-12-2000
			JP 2002508607 T	19-03-2002
			WO 9949412 A1	30-09-1999
US 2002006161	A1	17-01-2002	WO 0205541 A2	17-01-2002
			US 2002181580 A1	05-12-2002
US 2001016008	A1	23-08-2001	NONE	
WO 0191454	A	29-11-2001	US 6501397 B1	31-12-2002
			CN 1406431 T	26-03-2003
			WO 0191454 A2	29-11-2001
			EP 1290868 A2	12-03-2003
US 2002080878	A1	27-06-2002	NONE	